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Guidelines for electronic text files

To: All IEEE Authors

The Institute of Electrical and Electronics Engineers electronically processes all its Transactions, Journals, and Letters. To complete the production and final printing of your paper, the Transactions Department will need to receive your electronic file (and 2 paper copies) in the format described below. The following set of guidelines should be followed to ensure a smooth transition and subsequent upload to the IEEE electronic publishing environment.

General Instructions

1. Files should be submitted via disk (5 1/4" or 3 1/2"). We also accept 8 mm and 1/4 inch tapes.
2. Note the operating system, software, and version number used to create your disk. Write this information on the disk label with a felt pen.
3. Please do not import graphics files in your text file. Graphic files must be submitted on separate disks.
4. Make sure your files are self contained, i.e., that there are no pointers to your system setup.
5. Check that your files are complete. Include: abstract, text, references, footnotes, biographies, and figure captions.
6. Package diskettes to protect them in the mail.
7. Please include your FAX number and address where proofs may be sent.

Software

For the most accurate and efficient transferral of your manuscript, especially those containing extensive mathematics, use TeX, LaTeX, or Troff programs. Include macros used with your files. If possible, set manuscript column size to 21 picas (3 1/2" wide). An IEEE LaTeX style file may be obtained by e-mailing: help@ep.ieee.org. IEEETRAN.DOT, an author template and user's guide for Microsoft Word is available at: <http://www.ieee.org/pubs/authors.html>.

Manuscripts developed using other software like Word Perfect or Word programs are acceptable, but the mathematics will be rekeyed into a TeX format at IEEE. If none of these programs is available, send all text aspects of the manuscript in ASCII format.

Things Not To Do:

- Please do not put the files in a page layout software (Ventura, Quark, Pagemaker, Frame Maker).
- Please do not create special macros.
Use the standard codes provided by the program.

- Please do not send postscript files of the text.
- Please do not import graphics into a word processor program.

Text Via E-Mail

1. Files should not be e-mailed to the IEEE Staff Editor without the prior knowledge and approval of the Transactions Editor-in-Chief.
2. The transmitted file should reflect the exact content of the final manuscript, including captions, abstracts, references, and biographies.
3. Header information should accompany the transmitted files, clearly identifying the following:
 - a) The name of the Transactions
 - b) Author's name
 - c) Software used to format manuscript, e.g., TeX, LaTeX, etc.
4. No encoding is necessary to accommodate the size of files.
5. When e-mailing TeX, LaTeX, Troff, etc., always remember to also e-mail any macros (\defs) used to create your manuscript.
6. Not every document can be sent in its original form via e-mail. WordPerfect, WordStar, Word or any other proprietary coded word processor document cannot survive the trip, because e-mail handles only ASCII characters. To send the above via e-mail, encode in ASCII form, using a utility called uuencode. We would prefer, however, that binary files be sent on disk.
7. Two paper copies of the e-mail file along with the original figures and photos should be sent to the IEEE Staff Editor.

Guidelines for electronic graphics files

Introduction

The Transactions/Journals group of the Periodicals department is now accepting author supplied electronic graphics in PostScript, Encapsulated PostScript (EPS), and Tagged Image File Format (TIFF). In order to facilitate the prompt and accurate handling of your graphics we have developed the following guidelines. If in the course of production, you determine that a graphic needs to be revised, you will be required to resubmit it. Please send any comments or questions to graphics@ep.ieee.org.

File Formats

PostScript and Encapsulated PostScript (EPS)

When preparing your graphics in either of these formats please keep the following points in mind. If a graphic calls for fonts directly the use of one of these Adobe Type 1 fonts is preferable.

1. Times Roman
2. Helvetica
3. Helvetica Narrow
4. Courier

5. Symbol
6. Palatino
7. Avant Garde
8. Bookman
9. Zapf Chancery
10. Zapf Dingbats
11. New Century Schoolbook

Due to the way the production process is setup, it is best if you can encode the files prior to submitting them. If you do not encode, the files will be encoded by IEEE Periodicals during processing. As part of the production process PostScript and EPS files are converted to TIFF format.

Tagged Image File Format (TIFF)

If you elect to use TIFF files, then the following TIFF tags must be present in each graphic in order for it to be successfully processed.

1. ImageWidth—in pixels
2. ImageLength—in pixels
3. BitsPerSample—should be either 1 (for XResolution of 600 dpi) or 8 (for XResolution of 220 dpi)
4. Compression—should be 1=no compression
5. SamplesPerPixel—should always be 1
6. XResolution—should be either 600 or 220 dpi
7. YResolution—should match 6 above
8. ResolutionUnit—should be 2=inches

In addition, the following three tags should also be present (1) RowsPerStrip, (2) StripOffsets, and (3) StripByteCounts. TIFF files may be stored in either IBM or Macintosh formats. That is, the byte order may be either Intel or Motorola formats.

Image Quality of TIFF Files

The best final reproduction of your graphics will be achieved if your graphics are prepared at one of the recommended resolutions (600 dpi 1 bit/sample, for line art and 220 8 bits/sample, for photographs). Using a lower than recommended resolution may result in degradation of the printed image. Conversely, saving an image at a resolution higher than the recommended setting will take up additional disk space without improvement in the overall image quality.

The printed dimensions of your graphics are determined as follows (using the recommended resolutions).

printed image width (inches) =
ImageWidth (pixels) / XResolution (dots/inch)

printed image length (inches) =
ImageLength (pixels) / YResolution (dots/inch)

Color Graphics Requirements for all Graphics Formats

At present only "paletted color TIFF" format is accepted. You may be more familiar with this format as either a "color map" or

"color index" file. The advantage of using a paletted color TIFF file is that a higher quality image may be obtained for certain kinds of images, as compared to a scanned version.

If you provide a color PostScript or EPS file it will be converted to "paletted color TIFF".

If you choose to submit a paletted color TIFF file, please ensure that the "PhotometricInterpretation" tag contains a value of 3. The resolution of a paletted color TIFF file should be 400 dpi. *If you have any questions regarding these tags please email graphics@ep.ieee.org.*

Preparing Graphics for Submission

Please follow the guidelines below when submitting your graphics. For production purposes any line art, graphs, charts, drawings, tables, and photographs may be treated as a graphic.

1. All graphics should be submitted in PostScript, EPS, or TIFF formats. If submitting graphics in TIFF please make sure that the graphics contain all of the required tags.

2. Graphics should be submitted by either email or disk. For initial submissions, it is best if you use the same method you are using for your manuscript. If you are submitting your manuscript on disk, please submit your graphics on disks separate from your manuscript. If you wish to send the files by email, please use a supported encoding method. Whichever method you use, please include a scannable proof so we can verify that we have received the proper version of each graphic. If there is a problem with your initial submission the staff editor will contact you for a revised electronic graphic. If the revised graphic is unusable, we will scan your proof.

3. Revised or corrected graphics should have the same name as the original graphic.

4. If a graphic is to appear in print as black & white it should be submitted as a black & white file. If a graphic is to appear in color it should be submitted as a paletted color TIFF file. Alternately, a color graphic may be scanned.

5. If you are creating your graphics using a Macintosh and are submitting the graphics on disk, please send PC formatted floppy disks, if possible.

6. Please use lower case letters when naming figures, tables, and author photographs. Figures should contain only the image and not the caption text. Tables should contain only the body of the table. Below is the naming convention for these kinds of images.

A. Figures—should be named fig1.resolution, fig2.resolution, fig3.resolution and so forth. Please do not give them descriptive names. Thus, the first three figures of a paper may be named: fig1.600, fig2ab.220, and fig3.600.

B. Tables—should be named table1.resolution, table2.resolution, table3.resolution and so forth. Thus, the first three tables of a paper may be named: table1.600, table2.220, table3a.600, and table3b.600.

C. Author photographs—should be named as the first five

characters of the author's last name, followed by the resolution (should always be 220 dpi 8bits/sample). Thus, four author photographs for a paper may be named: smith.220, jones.220, lee.220, and moshf.220 (for morshfefhi's author photograph).

The final printed size of an author photograph is exactly 1" wide by 1 1/4" long (6 picas x 7 1/2 picas). Please ensure that the author photographs you submit are proportioned similarly. If the author photograph does not appear at the end of the paper, then please size it so that it is proportional to the standard size of 1 7/12" wide by 2" long (9 1/2 picas x 12 picas).

7. A column wide graphic can be no wider than 3 1/2" or 21 picas. A page wide figure can be no larger than 7 1/6" or 43 picas wide. The maximum depth of a graphic is 9 2/3" or 58 picas. Please allow space for the caption and any labels. Labels are the (a), (b), (c), etc., that identify the parts of your graphic.

8. Please use consistent typefaces and type sizes in all your figures and tables. Please choose type sizes that will allow the type to scaled to 8 points.

Naming Multiple Part Figures

It may be necessary for you to combine your figures so that they may be presented in the way that you prefer. The reason for this is that the page composition software we use stacks graphics one above another. Thus, if you want to have an "a part" above a "b part" (as shown below) you should submit two separate graphics files.

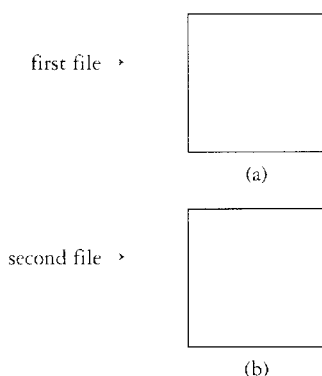


Figure 1 Caption Here

If you want to have an "a part" next to a "b part" and then a "c part" next to a "d part" then you should submit two figures. The first graphic will contain parts a & b and the second graphic will contain parts c & d (as shown below). If this were to be figure 1 then you would name them figlab.600 and figlcd.600 (see

"Preparing Graphics for Submission" for more information regarding naming of graphics).

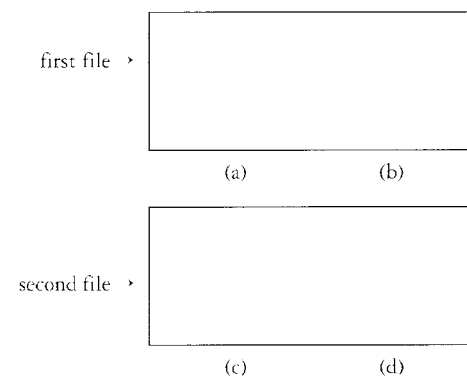


Figure 2 Caption Here

Encoding Methods

Please use one of the listed encoding methods if you are sending your graphics by e-mail.

1. MIME base64
2. uuencode
3. BinHex
- 4.

Compression Methods

In order to save disk space or to fit a graphic on a disk, please use the following compression methods.

1. compress
2. pkzip
3. Stuffit
4. gzip

Useful URL's

Below are additional URL's that may be helpful to you and your authors.

1. The URL address for the IEEE HomePage is <http://www.ieee.org>
2. For Transactions/Journals general information for authors, use: <http://www.ieee.org/pubs/authors.html>
 - a) For general information or to request a hard copy of the "Information for Authors," and the Transactions/Journals Author Kit, e-mail inquiries to trans@ieee.org
 - b) For a list of IEEE Transactions, including the scope, frequency, and Editor-in-Chief, see <http://www.ieee.org/pubs/guide.html>
 - c) To access a sample of the LaTeX style file go to the following: for LaTeX 2e Transactions style file (IEEEtran.cls) <http://www.ieee.org/pubs/IEEEtran2e.html> for LaTeX 2.09 Transactions style file (IEEEtran.sty) <http://www.ieee.org/pubs/IEEEtran209.html> for a sample of a LaTeX 2.09 document (IEEEsample2e.tex) <http://www.ieee.org/pubs/IEEEsample2e.html> for a sample of a bibliographic style file (IEEEbib.bst) <http://www.ieee.org/pubs/IEEEbib.html>
3. Instructions for authors submitting a paper in electronic form are available through http://www.ieee.org/pubs/sub_elec.html
4. IEEE Transactions/Journals Guidelines for Author Supplied Electronic Graphics is available through <http://www.ieee.org/pubs/transjour/graphguide/>